

Name : ^① Gulabai Zahid
ID # : 15175 (Rad 4th)
paper : Clinical Medicine - I
Submitted : Mam. Maheen Gul.
to

Question : 1

What is Hydronephrosis? cause, pathology, diagnosis & treatment.

Hydronephrosis:

- Hydronephrosis is the swelling of kidney due to build-up of urine.
- It occurs when urine cannot drain out from kidney to the bladder from a blockage or obstruction.
- It can occur in one or both kidneys.
Usually due to partial obstruction to the outflow of urine.

Causes:

- Hydronephrosis usually caused by another illness or risk.
Kidney stone
- Blood clot.

- Congenital blockage
- Scarring of tissue
- Tumor or cancer
- of bladder, colon etc
- Urinary tract infection
- Enlarged prostate.
- endometriosis
- ovarian cysts.
- pelvic organ Prolapse.
- narrowing of ureters.
- vesicoureteral reflux.

Pathology:

- **Hydronephrosis** is caused by obstruction of urine before the renal pelvis. The obstruction causes dilation of the nephron tubules and flattening of the lining of the tubules within kidney which cause swelling of renal calyces.
- Obstruction occurs anywhere along the upper UT will lead to increased pressure within the structures of kidney to bladder and urine unable to pass.
- It can either be acute or chronic.

Date: _____

Day:

M	T	W	T	F	S	S
---	---	---	---	---	---	---

③
Obstruction in lower UT also cause increased pressure through reflux of urine to kidney.

Diagnosis of hydronephrosis:

- IVU
- RGP
- Ultrasound
- Cystoscopy
- Urine culture
- Delayed empty
- Cystourethrogram
- Prenatal testing
- Postnatal testing
- Isotope renography

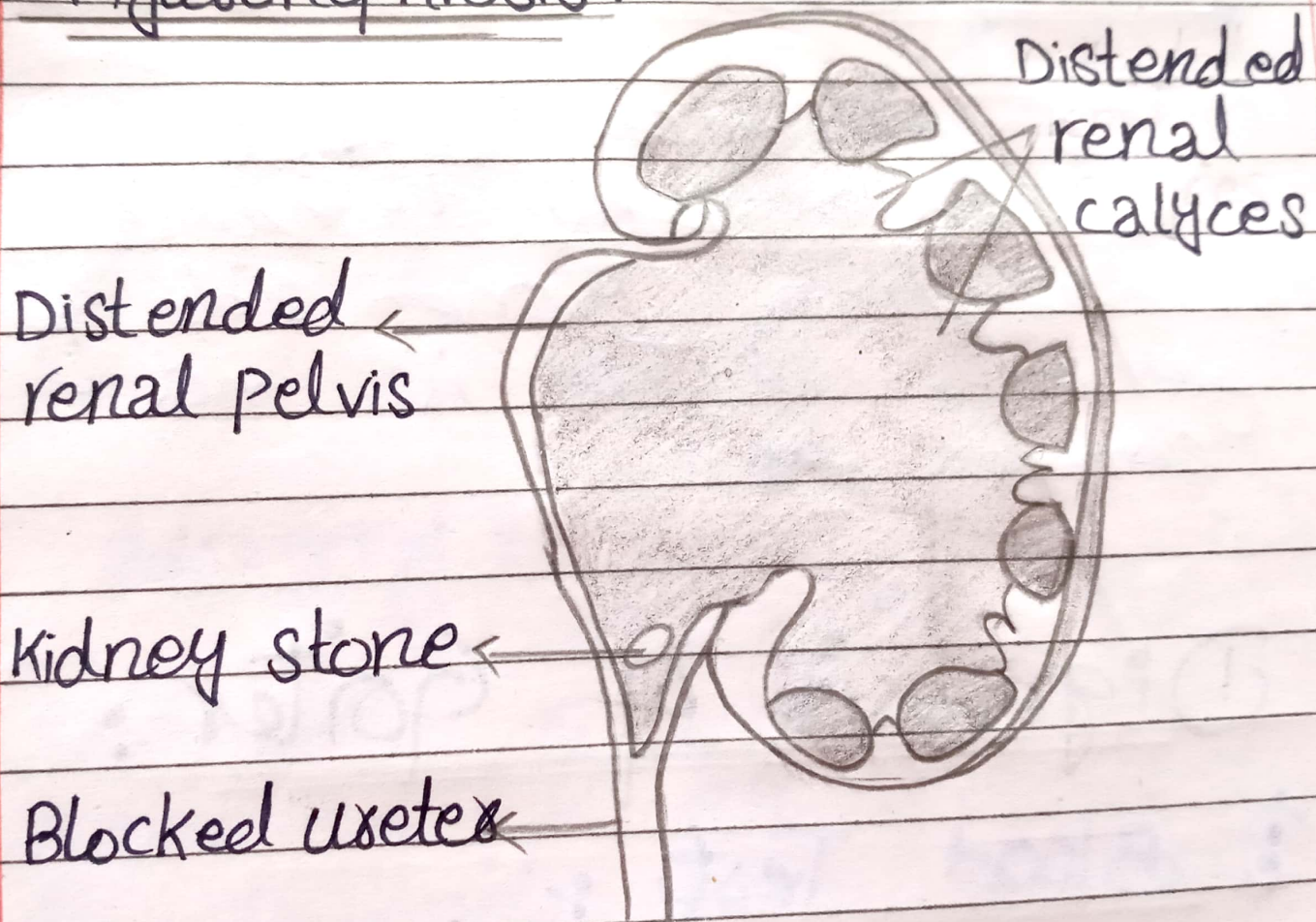
Treatment of hydronephrosis:

- insert a ureteral stent to allow the ureter to drain into bladder.
- insert a nephrostomy tube that allows the blocked urine to drain.
- Give antibiotic to control infection.
- Prompt drainage

Date: _____

Day: M T W T F S S

Hydronephrosis :



- Nephrectomy
- Relief of lower tract obstruction
- corrected to causes.

Question: 2

Categories of TB:

TB is an infectious disease caused by a bacterium called *Mycobacterium Tuberculosis*. It affects lungs badly.

① Active TB:

- Active TB is multiorgan disease caused by primary infection.
- Accordingly active TB could be primary TB or reactivation tuberculosis.
- In Active TB bacteria are rapidly multiply and affect other organs of body.
- The most common form of active TB is lung disease but invade other organs so called extra-pulmonary TB.

② Latent TB:

- Latent TB occurs when a person has TB bacteria within body but present in small number and don't develop disease. They are under control of body immune system.
- Latent TB does not cause symptoms. people have normal chest x-ray and negative sputum test.
- But ongoing risk is that latent infection may turn into active disease.
- Bacteria in body are asleep in latent TB.
- Latent TB diagnosed by TST tuberculin skin test.

③ Military TB:

- Military TB is a form of TB that is characterized by wide dissemination into human body and by small size of lesions.
- It is present 2% reported cases and 20% of all extra pulmonary cases.

Date: _____

Day:

W	T	W	T	F	S	S
---	---	---	---	---	---	---

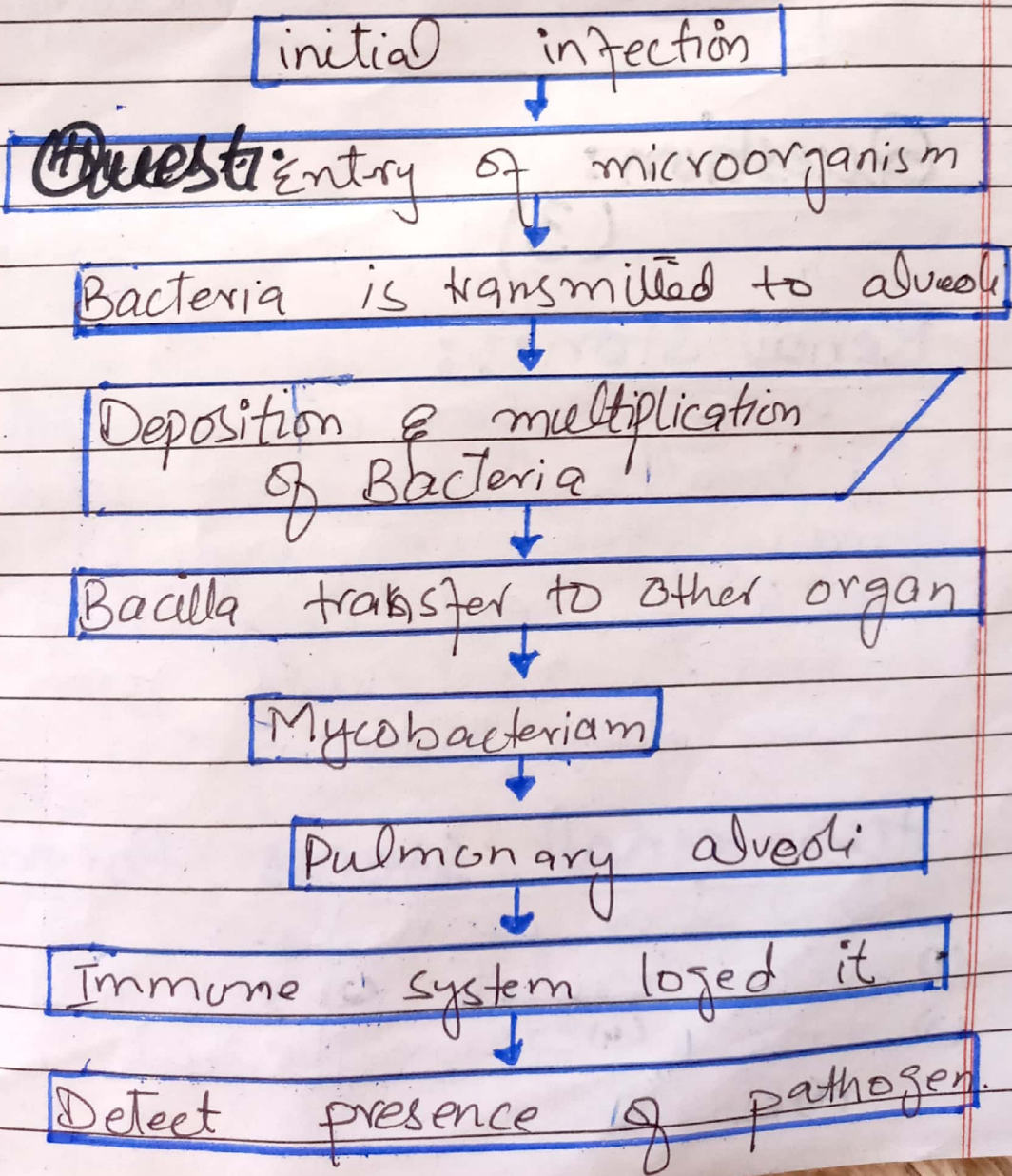
(6)

- Miliary TB is a rare form of active TB that occurs when TB bacteria find their way into blood-stream.
- In this way bacteria quickly spread in all body.
- If bone marrow is affected ~~it~~ it may have low red blood cells count or number.
- On radiograph it appear same as millet seeds. Miliary TB is fatal.

Pathophysiology of TB:

- Initially bacteria affect lungs, micro organism get entry through droplet nuclei with Bacilla are inhaled.
- Bacteria is transmitted to alveoli through airway and then deposition and multiplication of bacteria occurs. Bacilli also transport to other body parts through blood stream.
- Mycobacterium affect alveoli and alveolar macrophages lodged in.

- Mycobacterium inhibits the macrophages to form phagolysosomes and remains protected inside the macrophages and start replication inside macrophages. Now primary infection occurs.
- Body cell quickly activated and surrounds the cell to form granuloma which leads to necrosis also having lymph nodes. This is form Latent T.B.



Mycobacterium inhibits
macrophages

Start replication inside it

Primary infection occurs

Lead to necrosis

nearby lymph nodes

Latent TB
(classification of case complex)

Question:

(3)

Renal stones:

Renal stone, kidney stone or renal calculi are solid masses made of crystals. or it is hard deposition of mineral and salts form inside your kidney.

How renal stones formed:

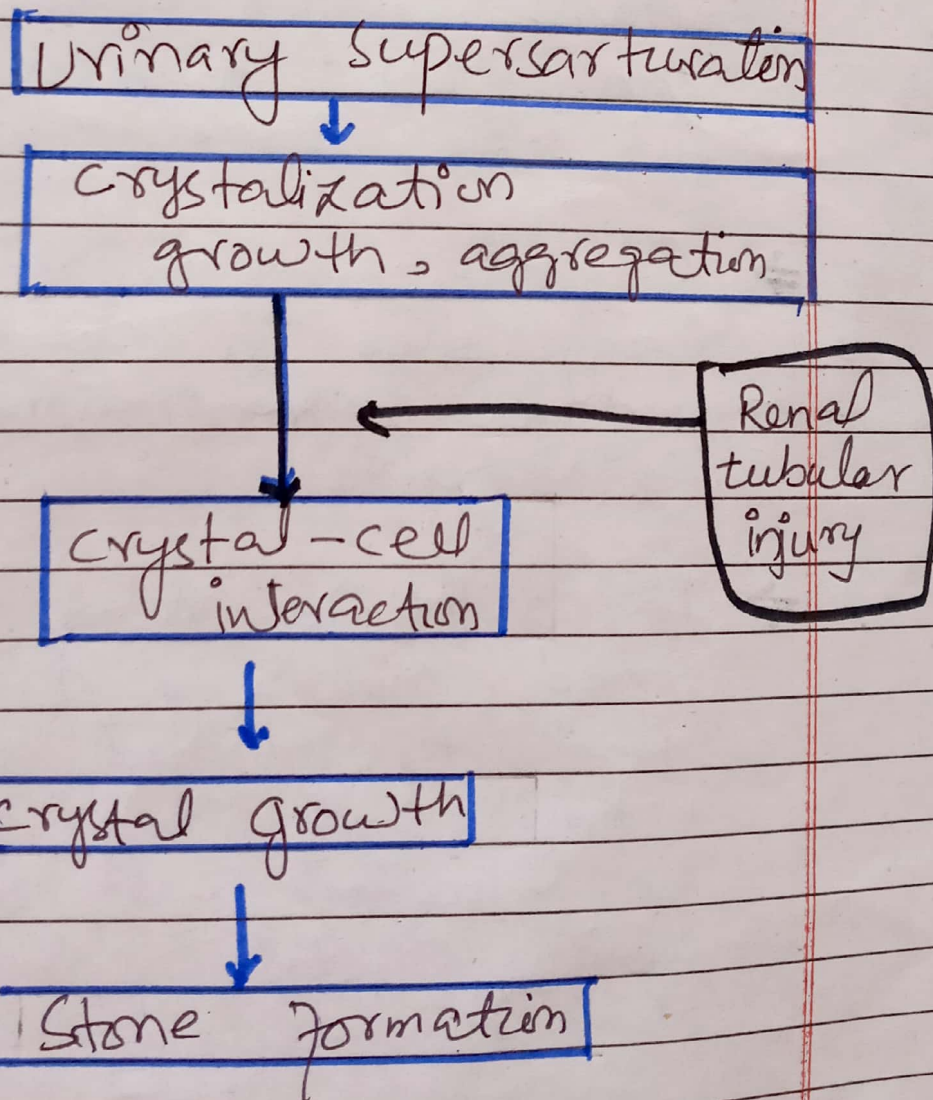
Renal stone can be:

- (1) calcium oxalate
- (2) uric acid
- (3) cystine
- (4) calcium phosphate
- (5) struvite

Mechanism: ⑨

- The formation of renal stones is a consequence of increased urinary supersaturation with formation of crystalline particles.
- Most of solid particles crystallizing within urinary tract will be excreted freely.
- But some solid particles retains within kidney, they can grow to become full size stone.
- Crystals can be retained at many sites in kidney and undergo size enhancing process of growth.
- In order for stones to be formed not only do crystals need to retained within kidney but they must be located at sites from which crystals can cause ulceration at papillary surface to form stone nidus.
- Most stones occurs when calcium combines with one or two substance : oxalate

- or phosphorus.
- Stones also form from uric acid.
 - Stones not develops overnight but 3-4cm form within three months.
 - The rapidity of stone formation is relate to metabolic risk.



Types ⁽⁷⁾ renal stones: ⁽¹¹⁾

① Calcium Oxalate Stone:

* It is most common type of kidney stone is a calcium oxalate stone.

* These result when the urine contains low level of citrate and high level of calcium and either oxalate or uric acid.

* It is also formed by food having high amount of oxalate like in plants, beets, black tea, chocolate, nuts, potatoes, spinach.

* Citrate, Not phosphate, can dissolve calcium oxalate monohydrate crystals and detach these crystals from renal tubular cells.

② Calcium Phosphate Stone:

* It is formed by the abnormalities in urinary system.

* Calcium phosphate is a minor component of up to 30% of calcium oxalate stones.

* Its causes related to high urine pH. Some patients may have incomplete renal tubular acidosis.

* Calcium phosphate stones are smooth, round, yellow orange in colour.

* Show radiopaque in radiograph having greatest density!

③ Struvite Stone:

* It is most common in females occurs as a result of UTI.

* These stones grow quickly and become large even sometimes occupy whole kidney.

* Struvite is a mineral that is produced by bacteria in urinary tract.

* Left untreated cause loss of function.

④ Uric Acid Stones:

* It is most common in male, caused by uric acid who don't drink enough water.

* also common in people having gout.

* Uric acid stones caused by eggs, beef, biken, milk, cheese, fish etc

* Pure uric acid stone generally not visible on plain radiograph and may be suspectable on CT scan.

⑤ Cystine Stones:

* It is caused by hereditary genetic disorder called cystinuria that leads to excess amount of amino acid cystine collecting urine.

* Cystine stones made from chemical called cystine, when too much cystine is present in urin it cause cystine stone.

Radiological procedures for renal stones:

CT scan:

Radiologist | technologist
may use | CT scan to
look for stones in kidney,
ureters and bladder to
determine their size, location
and shape etc.

MRI:

MRI use to produce three
dimensional image to look
stones in kidney.
It does not use radiation
so safe for pregnant women.

Kidney-Ureter-Bladder x-ray: (KUB)

KUB of Abdomen help
doctors to determine
the location of renal
stones, its growth etc.

Intravenous Pyelogram: (IVP)

IVP use for examination
of urinary tract, kidney.

(15)

IVP is radiological procedure used to visualize anomalies in Bladder, UT, Kidney.

Retrograde Pyelogram:

Retrograde Pyelogram is procedure used to visualize the ureter and kidney with radiograph.

Question: 4

Types, cause, diagnosis & treatment of goiter.

⊙ A condition that increases the size of thyroid is called a "Goiter."

⊙ It effect thyroid function.

Types of Goiter:

Colloid Goiter:

colloid goiter develops from the lack of iodine, a mineral essential to the production of thyroid hormones.

➤ Nontoxic (sporadic):

Its cause are usually unknown, it may cause by medication like lithium.

nontoxic goiter no effect the production of thyroid hormones.

They are also benign.

➤ Toxic Nodular Goiter:

This Goiter forms one or more small nodules as it enlarge.

These nodules produce its own thyroid hormones and cause hyperthyroidism.

Causes of Goiter:

• Iodine deficiency is the main cause of Goiter.

⚡ Graves' disease:

When thyroid produces more thyroid hormones than normal called hyperthyroidism.

Excess hormones enlarge thyroid gland.

(17)

Hashimoto's disease :-

The condition in which thyroid doesn't produce enough thyroid hormones, called hypothyroidism.

Inflammation :-

"thyroiditis."

Nodules :-

Solid or fluid-containing cyst may appear on thyroid and cause to swell it.

Pregnancy :

③ Thyroid Cancer:

Cancer may effect thyroid badly cause swelling of gland. This is not common. ^{one side of}

Diagnosis of Goiter:

⇓ Blood Test :-

Blood test can detect changes in hormones level.

⇓ Thyroid scan:-

Doctor may prescribe scan of thyroid, show size & condition of goiter.

⇓ Ultrasound:-

Ultrasound produce images of neck, the size of goiter and condition of nodules.

⇓ Biopsy:-

Biopsy is procedure that involves taking samples of thyroid tissue then sent to laboratory for examination.

19

Date: _____

Day: M T W T F S S

Treatment ⑦ Goiter:

⇅ Radioactive iodine:

is used to treat an overactive thyroid gland. It

⇅ Surgery:

Surgery use for cancer of thyroid by removing all or part of thyroid gland (thyroidectomy).

⇅ Medication:

→ Levothyroxine - for hypothyroidism

→ Corticosteroid - for inflammation

⇅ Home remedies:

- Get enough iodine
- Avoid excess iodine consumption
- Drinking Green tea
- Chew 3 to 4 raw garlic cloves in morning.

Question: 5

① Atelectasis:

Atelectasis is a complete or partial collapse of the entire lung or area (lobe) of lung.

It occurs when tiny air sacs within lungs becomes deflated. It is one of most common breathing complications after surgery.

Symptoms:

Difficulty in Breathing
Rapid, shallow "
wheezing
cough
Fever

Causes:

Mucus plug
Foreign bodies
Tumor inside airway
injury
pleural effusion
pneumothorax
scarring of lung tissue

Types :

- | | |
|-------------------|-------------|
| ① Obstructive | Atelectasis |
| ② Non-Obstructive | Atelectasis |
| • passive | Atelectasis |
| • Compressive | Atelectasis |
| • Adhesive | Atelectasis |
| • cicatrization | Atelectasis |

① Obstructive Atelectasis :

- * most common type
- * results from reabsorption of gas from alveoli.
- * occurs at level of larger or smaller bronchus.

② Non-Obstructive Atelectasis :

- * All forms of non-obstructive atelectasis are able drain up the bronchial tree. Becoz there is no obstruction, bronchoscopy is not therapeutic.

② Bronchiectasis :

It is permanent dilation of bronchi and bronchioles due to destruction of muscle and supporting tissue.

Causes :

- * infection
- * cystic fibrosis
- * genetic condition
- * unknown
- *

Treatment :

- * Antibiotics
- * Bronchodilators
- * lung transplant
- * chest Physical therapy

Duration :

- * Long term

Diagnostic method :

- * CT scan
- * chest x-ray
- * sputum culture

Symptoms :

- * productive cough
- * SOB
- * chest pain

Etiology :

* Bronchiectasis is the result of chronic infection with resulting paronchymal destruction, fibrosis, damage bronchi.

- * Long lasting bronchial obstruct
- * Congenital condition
- * cystic fibrosis

Pneumonia:

“ It is the inflammation of lung parenchyma ~~rather~~ than of infective origin.”

“ Alveoli fill with fluid causes SOB. ”

∴ pneumonia infection one or both lungs.

Symptoms:

- : Fever
- : Cough with sputum
- : SOB
- : Chest pain
- : loss of appetite
- : headache
- : Vomiting
- : Fatigue
- : Chills

Causes:

- : Bacterial pneumonia
- : Viral pneumonia
- : Fungal pneumonia

Diagnosis:

- * Chest x-ray is the best.
- * CT also done

Treatment:

- » Antibiotic
- » Cough medicine
- » Fever reducers
- » Pain relievers

Classification:

(i) Type 1

(Morphological classification)

- » Lobar pneumonia
- » Bronchopneumonia

(ii) Type 2

(Clinically classification)

- » Community - acquired pneumonia
- » Hospital - acquired pneumonia

Stages:

- » congestion
- » Resolution
- » Red hepatization
- » Grey hepatization

Complications:

- » Sepsis
- » Lung abscesses
- » ARDS (Acute - respiratory distress syndrome).